

*List of certain meteorological terms used in the Philippines.*

English.	Maguindanao Moro.	Sulu Moro.	Malay.	Spanish.
White clouds	Gabun a maputi.	Andum puti.	Awan puti.	Nubes blancas.
Dark clouds	Gabun a maytım or (Ründüng).	Gabun.	Awan itam.	Nubes oscuras.
High clouds	Gabun a mapuru.	Awan Mata'as.	Awan tinggi.	Nubes elevadas.
Low clouds	Gabun a mababa.	Awan hababa.	Awan randah or rendah.	Nubes bajas.
Clouds	Gabun.	Awan.	Awan.	Nubes.
Fog	Lüküp.	Gabun.	Kabut.	Niebla.
Rain	Uran.	Ulan.	Hujan.	Lluvia.
Heat	Kayaw.	Pasu.	Panas.	Calor.
Cold	Kat inggaw.	Haggut.	Sejuk.	Frio.
Rainbow	Bulutu or tupung.	Inak.	Plangi.	Arco iris.
Storm	Ribut or Subu-subu.	Hunus or unbak Tawpan.	Ribut.	Tormenta.
Thunder	Ruggung.	Dawug-dug or Daug-dug.	Guroh.	Trueno.
Lightning	Kilat.	Kilat.	Kilat.	Relampago.
Wind	Undu.	Hangin.	Angin.	Viento.
Snow or hail	Uran-watu.	Ulan batu.	Thalj (Ar.).	Nieve ó granizo.
Ice	Ig-a-watu.	Tubig-batu.	Ayar baku.	Hielo.
Moisture	Magbasa or Musa.	Basa.	Lengas.	Humedad.
Current	Margus Ig.	Sug.	Arus.	Corriente.
Kite	Layang-layang.	Taguri.	Layang-layang.	Cometa.
Waterspout	Subu-subu.	Buhawi.	Putting blion.	Manga Marina.
Whirlwind	Ripurus.	Ayimpus or Aimpus.	Angin Putting blion.	Remolino.
Sunlight	Sigay.	Sawa.	Trang.	Luz del Sol.
Darkness	Kalibutung.	Lindom.	Gláp.	Oscuridad.
Moon	Ulan-ulan.	Bulan.	Bulan.	Luna.
Sun	Snang.	Suga.	Mata hari.	Sol.
Star	Bitun.	Bit'un.	Bintang.	Estrella.
Weather (day)	Gay.	Adlaw.	Musim.	Tiempo.

## WEATHER BUREAU MEN AS EDUCATORS.

The regular course of instruction in meteorology at the University of Missouri, at Columbia, was given this year by Mr. George Reeder, section director. The duration covered the entire second semester. The class consisted of medical, agricultural, and engineering students in about equal number, in all about thirty, and was divided into four sections. Charts, photographs, lantern slides, and especially blackboard diagrams were used. References were made to the books by Davis, Waldo, Hann, and Ferrel; to Bartholomew's Physical Atlas, Volume III, and to the publications of the Weather Bureau. Observations, written exercises, and laboratory work, including the making of weather maps and forecasting, were required. The final examination was sustained in a very creditable manner, and great interest was taken in the entire course.

During the past year Mr. Reeder has delivered several special lectures outside of the regular course. The most important of these were one on "Meteorological instruments and their uses", to a body of visiting State teachers, and one on "Clouds" (illustrated), to the Society of Senior and Junior Engineers of the university.

The set of lantern slides illustrating the work of the Weather Bureau and the accompanying lecture prepared by Mr. John R. Weeks, of the Binghamton, N. Y., office, had, up to June 12, been exhibited and given in twenty places. In many of these they have been used in several schools, or schools have united in their use. The lectures have been open to the public, and have usually been announced in the local papers. Nearly thirty other requests have been received, which it is hoped to comply with during the next school year.

According to The Laurentian, the organ of the students of St. Lawrence University, Canton, N. Y., the honorary degree of master of arts was conferred upon Merton Leonard Fuller, of the United States Weather Bureau. Mr. Fuller has been in charge of the local weather station during the past year, and has also served the university as a lecturer on meteorology and climatology. He has won the esteem of all who

know him and made many friends, and the action of the trustees in conferring this degree was a matter of general congratulation.

Under date of July 23, Mr. Fuller reports as follows relative to his educational work during the past year:

In St. Lawrence University an elective course in meteorology, three hours per week, open to junior and senior classes, was continued throughout the year. The first semester was devoted to meteorology, using a part of Davis's text as a basis; the second semester to a course of lectures on general climatology, with student reports and laboratory work, using as a foundation a number of official and standard works. Final examinations were given at the end of each semester and past by every student. The number of students electing the course increased materially for the second semester, during which period the class enrolled nearly one-fourth of all those eligible to the work, and more than one-seventh of the entire enrollment of the university, excepting, of course, that portion of the university not located at Canton. The class in physiography taught during a part of the second semester is not included in any manner in the statements of this letter.

For the lectures of the second semester over 500 slides were used, fully half of which are now a part of my personal equipment for future work. In my personal equipment is also a Thompson combination reflectoscope and lantern, by which drawings or photographs may be thrown directly upon the screen without the need of slides, and supplementary use was made of this method.

Most of the slides in my personal stock were made to order for the work of the semester. They were prepared from original material, or taken from Weather Bureau Bulletins P and Q, Bartholomew's Physical Atlas, Vol. III, the MONTHLY WEATHER REVIEW, or from various other works in the station library or loaned by the Central Office. Weather Bureau Bulletin Q and Bartholomew's Atlas were especially valuable sources, and were extensively drawn upon.

In addition to the work at St. Lawrence University was the course of seventeen or eighteen lectures given at Potsdam, N. Y., during the second semester, in connection with which a class of nine students of Clarkson School of Technology (one of the original ten having left school) received one hour's credit for the lectures, collateral reading, and examination.

There were also during the winter and spring two lectures before teachers' institutes and three before farmers' institutes, some of which, it is thought, were previously reported.

Besides the foregoing, considerable has been done on a personal card index for use in meteorological educational work. This now covers nearly all the station library and selected subjects in the large university library, and is already of valuable service.

The following lectures and addresses by Weather Bureau men have been reported:

Mr. H. F. Alciatore, May 4, 1907, before the Little Rock, Ark., High School, also May 28, before the Railroad Young Men's Christian Association, Argenta, Ark., on "The work of the Weather Bureau".

Mr. J. Warren Smith, June 20, 1907, before the Franklin County Pioneers' Association, at Westerville, Ohio, on "The making of weather forecasts".

Mr. R. H. Sullivan, June 6, 1907, at the outdoor meeting of the Sedgwick County Horticultural Society, near Wichita, Kans., on "The history, methods, and benefits of the U. S. Weather Bureau".

Mr. A. B. Wollaber, July 1, 1907, before a gathering of the graduates of Pomona College, at Los Angeles, Cal., on "The work of the Weather Bureau and the methods employed in forecasting".

Classes from universities, schools, and colleges have visited the Weather Bureau offices to study the instruments and equipment and receive informal instruction, as reported from the following stations:

Chicago, Ill., January 23, 1907, pupils of the Lake High School; March 23, 1907, pupils of the Central Young Men's Christian Association, of Chicago; March 27, 1907, pupils of the Chicago Normal School; March 30, 1907, pupils of the Lake View High School; April 9 and 11, 1907, pupils of the Thomas Hoyne High School; April 17, 1907, pupils of the South Chicago High School; April 20, 1907, 18 teachers of the Chicago schools; April 29, 1907, pupils of the Hyde Park High School; May 15, 1907, pupils of the Thorp School, South Chicago; June 1, 1907, pupils of the Evanston Township High School, Evanston, Ill.; June 20, 1907, pupils of the J. Sterling Morton High School, Clyde, Ill.

Columbus, Ohio, June 1, 1907, a class in geology from Ohio State University.

Grand Junction, Colo., June 8, 1907, a class from the local School of Journalism.

New Orleans, La., June 6, 1907, a class from the Newman Manual Training School.

San Diego, Cal., June 13, 1907, the physical geography class of the San Diego State Normal School.

Syracuse, N. Y., June 5, 1907, a class from the Syracuse High School.

Vicksburg, Miss., May 29, 1907, part of the junior and senior classes from the Walnut Street High School.

#### CONFOUNDING CAUSE AND EFFECT.

The following remarks, quoted from the New York Times of June 28, 1907, forcibly repeat the remonstrance which was long since published in the MONTHLY WEATHER REVIEW, but which can not be too often reiterated:

Our first brief "spell" of hot weather ended Wednesday evening, as such "spells" usually do, with a thundershower. Thereupon everybody said, "The storm has cooled the air", just as everybody panting in the heat and humidity had said before the storm came that when it did arrive it would have that highly desirable effect.

And yet there is not, as a matter of fact, the slightest reason for thinking that thunderstorms ever did or ever will "cool the air" or otherwise in any degree change what we call "the weather". These little tempests are an effect of the cool wave, and not at all its cause, for they are produced, in a way fairly well understood, just at the point where a wave of cool air overtakes a hot and humid wave as the two leisurely take their way across the continent; and they are merely a symptom of the final struggle between the two.

It seems as if it would be easy to keep this sequence of events in mind, once it had been learned, and this one has been explained often enough; but habits of speech, inherited from innumerable prescientific days, are hard to break, and for centuries to come, probably, people and newspapers will continue to credit thunderstorms with bringing a relief as little the work of the storms as it is the work of the newsboys who sell the papers announcing the amount of rain that fell. Even the professional weather observers continue to use the old, wrong phrases; at any rate, the reporters quote them as using those phrases, and we have yet to hear of any protests from the Bureau men.

#### THE ST. SWITHIN'S DAY FALLACY.

By J. H. MORRISON. Dated Brooklyn, N. Y., June 14, 1907.

The legend of St. Swithin relates that he died in 862, and was buried on the north side of the church at Winchester, England. Many years later, on July 15, when his body was to have been disinterred and buried again inside the walls of the church, excessive rains occurred, continuing for 40 days, whence the saying that if rain falls on July 15 it will continue to fall every day, more or less, for 40 days following. The idea of this 40 days' rain in England was brought to America in colonial days, and is still current in many parts of the country.

Meteorologists have examined the rainfall statistics of Great Britain and have shown that there are no forty successive days of rain after July 15, and, in fact, no apparent connection between the weather of that date and the 40 days following<sup>1</sup>; but I know of no special study of the subject based on records for this country.

The early meteorological records of the United States are somewhat incomplete, but from a record kept of observations made by Prof. Parker Cleaveland of Bowdoin College at Brunswick, Maine, and published by the Smithsonian Institution, we are able to obtain the number of days of rain at that station for the full months of July and of August from 1808 to 1859. For this period of 51 years the average number of days of rain during the whole month of July was 7.1 days, and for the month of August 6.7 days. The highest number of days in July when there was rain was 13 in 1808, and the same number in 1828, and in August there were 13 days in 1812 and the same number in 1826. The greatest precipitation at this station was in August, 1843, when there fell 12.21 inches, and the next was in July, 1845—8.67 inches. The average rainfall for 31 years for July was 3.65 inches and for August 4.37 inches.

The record of observations made by Dr. S. P. Hildreth at Marietta, Ohio, from 1818 to 1859, as published by the Smithsonian Institution, is not full, but it shows that for a period of 32 years the greatest number of days of rain for July was 18 days in 1831, and 16 days in 1848. The month of August does not show such a wide range of days of rain, there being 4 years of 11 days each, 4 years of 10 days each, and 5 years of 9 days each. The average number of days of *no rain* during this period, by this record, was for July 21.9 days, and for August 21.7 days. The annual average of days of rain for the 32 years was for July 8.3 days, and for August 7.6 days. The greatest monthly precipitation during the two months was in July, 1831, 12.12 inches.

The data from the two preceding stations being from *monthly* records of the observations are not so valuable as desired for the purpose of this paper, still they show that there was not one year when 40 days of rain took place at the stations during the period.

The most valuable study for this country that can be made of the weather during the 40 days succeeding St. Swithin's Day is that from the tables of the daily precipitation prepared especially by the writer for this paper from the official records of the United States Weather Bureau in New York, and those of the meteorological observatory in Central Park, New York. This is the first time that this period of weather has been so covered. There are some advantages to be obtained from the comparisons of these records, tho they are not for the same period of time; for the meteorological observatory table covers 36 years, while that of the United States Weather Bureau is for 35 years. These stations being comparatively so short a distance apart, 4.8 miles in a nearly north and south direction, and in the charge of trained observers of

<sup>1</sup>See Prof. W. W. Bryant: The St. Swithin's Day Tradition. The Observatory, November, 1904. Symons's Meteorological Magazine, October, 1904, vol. 39, page 175.